Figure 17 is a block diagram of a mini cell header analyzing unit used to extract the user data part of a mini cell from a user data channel using the extension code method in accordance with the invention,

Figure 18 is a block diagram of a modified mini cell header analyzing unit used to extract the user data part of a mini cell from a user data channel using either the extension code method or the extension bit method,

Figure 19 is a block diagram showing a mini cell header analyzing unit used to extract the user data part of a mini cell from a user data channel using the bit extension method in accordance with the invention,

Figure 20 shows a mini cell's header wherein the circuit identifier CID is used to indirectly indicate the mini cell size,

Figure 21 is a mapping table used together with the indirect method for indicating the cell size,

Figure 22 shows different tables which together span up an address space used on the links of the transport network in a mobile telephone system,

Figure 23 is a block diagram of mobile telephone system provided with the cell header analyzing units.

DETAILED DESCRIPTION OF EMBODIMENTS

In Figure 1 an ATM cell 1 is shown which comprises a header 2 and a payload 3. Conventionally the payload comprises user data relating to an individual connection. In the aforesaid PCT/SE95/00575 patent document an ATM cell is disclosed which in its payload carries one or more mini cells. In the example shown in Figure 1 three mini cells 4, 5 and 6 of different sizes are shown. The ATM header 2 comprises 5 octets (1 octet = 8 bits = 1 byte) and its payload 3 comprises 48 octets. Each mini cell 4, 5, 6 comprises a header 7 and

user data.

In Figure 2 an example of a mini cell header 7 is shown to comprise 2 octets 8, 9. Other mini cell header sizes are also conceivable depending on the ATM system design. A mini cell header size of 3 octets or more are also conceivable. The mini cell header 7 comprises a circuit identifier CID, which identifies the established connection/circuit, a payload type selector PTS which identifies different payload types such as user data, control data, maintenance data, a length indicator LEN, and a header integrity check field/bit HIC, which supervises the header integrity. The length indicator LEN defines the size of the payload of the individual mini cell.

There is a need for distinguishing between different types of mini cells. The following is required to indicate with the PTS field:

User information of fixed length: The length indicator LEN is not necessary in the header and the user information length is instead configured into the system and into the service. For "GSM full rate", the user information length is 35 octets, for PDC full rate it is 20 octets and for "D-AMPS full rate" it is 23 octets.

User information of different sizes, i.e. user information with variable length: This is the preferred embodiment and will be described below. To use the PTS field in order to indicate user information with variable length is a future proof solution.

User information of different sizes of extended lengths.

OAM information per circuit/connection.

Synchronization information: The use of the PTS field for this purpose is optional.

In Figure 3 the cell header 7 is shown to comprise a fixed size length field 10, referred to as LEN field, which is used to indicate the size of the user data of the mini cell to

which the header belongs. The size of the mini cell is indicated in this field 10 using linear coding. Linear coding means that the code corresponds to the actual size of the mini cell. For example, if the cell length is 5 octets a binary 5 (000101) is written into the LEN field. For short mini cell sizes the fixed length field 10 will occupy much band width but all of the occupied band width is not used for transmission of useful information as exemplified by the leading zeros in the two examples given. It should be noted that the LEN field 10 is carried by each mini cell of an individual connection. A further drawback with this fixed size LEN field 10 is that the range of cell sizes which can be expressed with linear coding is restricted. With a fixed size LEN field 10 comprising 6 bits cell sizes from 1 to 64 octets can be indicated. Should larger cell sizes be used for an individual connection, then the length of the fixed size length field 10 must be enlarged which in turn leads to even more waste of band width.

In Figure 4 a fixed size length field 11 in accordance with the invention is shown. Non-linear coding is used to indicate a wide range of different cell sizes. In the example given 3 bits are used in an octet, for example octet 9, of a mini cell's header. The rest of the bits of the same octet are free and can be used for any of the above listed purposes. This contributes to reduce the overall size of the header which in its turn increases the efficiency with which the band width is used.

In a mobile telephony system mini cells are generated by voice coders. Today the current IS 95 voice coders uses 2, 5, 10 or 22 octets. Using the fixed size length field 10 in accordance with said ANSI document 7 bits would be required in the header of the mini cell in order to indicate a cell size of 22 octets. With the non-linear coding in accordance with Figure 4 the fixed size length field 11 is 3 bits. This gives a band width saving of 10% for an IS 95 voice coder that